

## § 431.63

## 10 CFR Ch. II (1–11 Edition)

*Door angle* means:

(1) For equipment with flat doors, the angle between a vertical line and the line formed by the plane of the door, when the equipment is viewed in cross-section; and

(2) For equipment with curved doors, the angle formed between a vertical line and the straight line drawn by connecting the top and bottom points where the display area glass joins the cabinet, when the equipment is viewed in cross-section.

*Holding temperature application* means a use of commercial refrigeration equipment other than a pull-down temperature application, except a blast chiller or freezer.

*Horizontal Closed* means equipment with hinged or sliding doors and a door angle greater than or equal to 45°.

*Horizontal Open* means equipment without doors and an air-curtain angle greater than or equal to 80° from the vertical.

*Ice-cream freezer* means a commercial freezer that is designed to operate at or below –5 °F (–21 °C) and that the manufacturer designs, markets, or intends for the storing, displaying, or dispensing of ice cream.

*Integrated average temperature* means the average temperature of all test package measurements taken during the test.

*Pull-down temperature application* means a commercial refrigerator with doors that, when fully loaded with 12 ounce beverage cans at 90 degrees F, can cool those beverages to an average stable temperature of 38 degrees F in 12 hours or less.

*Remote condensing unit* means a factory-made assembly of refrigerating components designed to compress and liquefy a specific refrigerant that is remotely located from the refrigerated equipment and consists of 1 or more refrigerant compressors, refrigerant condensers, condenser fans and motors, and factory supplied accessories.

*Self-contained condensing unit* means a factory-made assembly of refrigerating components designed to compress and liquefy a specific refrigerant that is an integral part of the refrigerated equipment and consists of 1 or more refrigerant compressors, refrigerant con-

densers, condenser fans and motors, and factory supplied accessories.

*Semivertical Open* means equipment without doors and an air-curtain angle greater than or equal to 10° and less than 80° from the vertical.

*Test package* means a packaged material that is used as a standard product temperature-measuring device.

*Vertical Closed* means equipment with hinged or sliding doors and a door angle less than 45°.

*Vertical Open* means equipment without doors and an air-curtain angle greater than or equal to 0° and less than 10° from the vertical.

*Wedge case* means a commercial refrigerator, freezer, or refrigerator-freezer that forms the transition between two regularly shaped display cases.

[70 FR 60414, Oct. 18, 2005, as amended at 71 FR 71369, Dec. 8, 2006; 74 FR 1139, Jan. 9, 2009]

### TEST PROCEDURES

#### § 431.63 Materials incorporated by reference.

(a) *General.* We incorporate by reference the following standards into Subpart C of Part 431. The material listed has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR 51. Any subsequent amendment to a standard by the standard-setting organization will not affect the DOE regulations unless and until amended by DOE. Material is incorporated as it exists on the date of the approval and a notice of any change in the material will be published in the FEDERAL REGISTER. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). Also, this material is available for inspection at U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024, 202-586-2945, or go to: <http://www1.eere.energy.gov/buildings/>

## Department of Energy

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*appliance standards*/. Standards can be obtained from the sources listed below.

(b) ANSI. American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036, 212-642-4900, or go to <http://www.ansi.org>:

(1) ANSI /AHAM HRF-1-2004, *Energy, Performance and Capacity of Household Refrigerators, Refrigerator-Freezers and Freezers*, approved July 7, 2004, IBR approved for § 431.64.

(2) [Reserved]

(c) ARI. Air-Conditioning and Refrigeration Institute, 4100 N. Fairfax Dr., Suite 200, Arlington, VA 22203, or <http://www.ari.org/std/standards.html>:

(1) ARI Standard 1200-2006, *Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets*, 2006, IBR approved for §§ 431.64 and 431.66.

(2) [Reserved]

[74 FR 1139, Jan. 9, 2009]

### § 431.64 Uniform test method for the measurement of energy consumption of commercial refrigerators, freezers, and refrigerator-freezers.

(a) *Scope*. This section provides the test procedures for measuring, pursuant to EPCA, the daily energy consumption in kilowatt hours per day (kWh/day) for a given product category and volume or total display area of commercial refrigerators, freezers, and refrigerator-freezers.

(b) *Testing and calculations*. (1) Determine the daily energy consumption of

each covered commercial refrigerator, freezer, or refrigerator-freezer by conducting the test procedure set forth in the Air-Conditioning and Refrigeration Institute (ARI) Standard 1200-2006, "Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets," section 3, "Definitions," section 4, "Test Requirements," and section 7, "Symbols and Subscripts." (Incorporated by reference, see § 431.63) For each commercial refrigerator, freezer, or refrigerator-freezer with a self-contained condensing unit, also use ARI Standard 1200-2006, section 6, "Rating Requirements for Self-contained Commercial Refrigerated Display Merchandisers and Storage Cabinets." (Incorporated by reference, see § 431.63) For each commercial refrigerator, freezer, or refrigerator-freezer with a remote condensing unit, also use ARI Standard 1200-2006, section 5, "Rating Requirements for Remote Commercial Refrigerated Display Merchandisers and Storage Cabinets." (Incorporated by reference, see § 431.63)

(2) Conduct the testing required in paragraphs (b)(1) of this section, and determine the daily energy consumption, at the applicable integrated average temperature in the following table. The integrated average temperature is determined using the required test method.

Category	Test procedure	Integrated average temperatures
(i) Refrigerator with Solid Door(s) .....	ARI Standard 1200-2006* .....	38 °F (±2 °F).
(ii) Refrigerator with Transparent Door(s) .....	ARI Standard 1200-2006* .....	38 °F (±2 °F).
(iii) Freezer with Solid Door(s) .....	ARI Standard 1200-2006* .....	0 °F (±2 °F).
(iv) Freezer with Transparent Door(s) .....	ARI Standard 1200-2006* .....	0 °F (±2 °F).
(v) Refrigerator-Freezer with Solid Door(s) .....	ARI Standard 1200-2006* .....	38 °F (±2 °F) for refrigerator compartment. 0 °F (±2 °F) for freezer compartment.
(vi) Commercial Refrigerator with a Self-Contained Condensing Unit Designed for Pull-Down Temperature Applications and Transparent Doors.	ARI Standard 1200-2006* .....	38 °F (±2 °F).
(vii) Ice-Cream Freezer .....	ARI Standard 1200-2006* .....	-15.0 °F (±2 °F).
(viii) Commercial Refrigerator, Freezer, and Refrigerator-Freezer with a Self-Contained Condensing Unit and without Doors.	ARI Standard 1200-2006* .....	(A) For low temperature applications, the integrated average temperature of all test package averages shall be 0 °F (±2 °F). (B) For medium temperature applications, the integrated average temperature of all test package averages shall be 38.0 °F (±2 °F).